

Application Number; 10/084, 072

Group Art Unit Number; 3635

Filing date; 02/27/2002

Name of the examiner who prepared
the most recent office action;

Mr. MCDERMOTT, KEVIN

Title of invention;

SUPPORT STRUCTURE FOR ISOLATING
EARTHQUAKE MOTIONS

WHAT I CLAIM IS;

1. A support structure for isolating earthquake motions, comprising a pressure-receiving steel plate of concave-curved surface adjusted with with a bottom of a structure and a pressure-applying steel plate of convex-curved surface facing to said concave-curved surface, a means of interposing two types of pluralities of steel balls between said pressure-receiving curved surface and pressure-applying curved surface, one type of said plurality of steel balls are made with (less accuracy) smaller diameter than that of other

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group of balls, a means of mounting said two groups of balls on said pressure-receiving curved surface steel plate to come in point contact in all direction, a means of covering all the surface of top and bottom steel plate except the curved surface with concrete by which forming a column as a foundation of a structure, a means of applying convex curved surface with a foundation of a construction by bolts and nuts, a means of mounting a aligning frame for said steel balls on a periphery of said concave curved surface to allow said balls to move freely, a means of isolating the linkage of earthquake motion to the structure by unified

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simultaneous rolling of said two types of balls
interposed between said foundation pressure-
receiving upper surface steel plate and oppo-
siting pressure-applying bottom and steel plate
surface of said colum.

2. A support structure for isolating earthquake
motions as claimed in claim 1, a means of moving
the structural colum vertically by foundation
pressure-receiving curved surface thereby stop
the propagating movements by shock absorber
effect of spherical level difference (energy ge-
nerated) by which isolating the earthquake
motions and stopping the free movement.

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A support structure for isolating earthquake motions, comprising a pressure-receiving steel plate of concave-curved surface adjusted with a bottom of a structure and a pressure- applying steel plate of convex-curved surface ~~oppositing~~ facing to said concave-curved surface, a means of interposing two types of pluralities of steel balls between said pressure-receiving curved surface and pressure-applying curved surface, one type of said plurality of steel balls are made with (less accuracy) smaller diameter than that of other

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groups of balls on said pressure-receiving
curved surface steel plate to come in point
contact in all direction, a means of covering
all the surface of top and bottom street plate
except the curved surface with concrete by which
forming a colum as a foundation of a const-
ructure, a means of applying convex curved
surface with a foundation of a construction by
bolts and nuts, a means of mounting a aligning
frame for said steel balls on a periphery of
said concave-curved surface to allow said balls
to move freely, a means of isolating the linkage
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spherical level difference (energy generated), by
which isolating the earthquake motion and stopp-
ing the free movement.

2, A support structure for isolating earthquake
motions as claimed in claim 1:

a means of giving the foundation hoop a function
of suppress the foundation column not to remove
from the pressure receiving balls when jump-up
phenomenon caused by directly under earthquake
or float-up phenomenon caused by typhoon, in
this case the hoop is on the foundation.